J. E. Roush Lake

Huntington County

2007 Fish Management Report

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EXECUTIVE SUMMARY

- J.E. Roush is a U.S. Army Corps of Engineers (USACE) flood control project located approximately two miles south of the city of Huntington. The dam is located on the Wabash River at river mile (RM) 411.1 and was completed in 1968.

- A general fish population survey was conducted July 15 to July 17, 2007 to evaluate the overall condition of the fishery and survival of stocked walleye.

- Fish collection effort consisted of 2.0 h of pulsed D.C. night electrofishing with two dippers. A total of nine trap net sets and twelve experimental gill net sets were made over a two day period (Figure 1).

- A total of 1,945 fish, representing 25 species, was collected during this survey. Total weight of the fish sample was approximately 1,299 lbs. Freshwater drum were the most abundant fish collected by number (27%), followed by channel catfish (17%), and gizzard shad (16%).

- A total of 516 freshwater drum, ranging in total length from 2.5 to 23.1 in was collected during this survey.

- A total of 332 channel catfish, ranging in total length from 5.3 to 28.3 in was collected during this survey. Channel catfish of quality size (16 in or greater) comprised 23% of the sample, while channel catfish of this size comprised 32% of the 2001 survey.

- A total of 135 white crappies was collected at Roush Lake. White crappies of quality size (8 in or greater) comprised 27% of the sample.

- Five walleye were collected during the survey, all of which were young of the year. Total length of walleye collected ranged from 4.3 to 5.8 in.

- Despite the dramatic changes in water level Roush Lake continues to provide good angling opportunities for several species. Channel catfish continue to provide the best angling opportunity at Roush Lake. Channel catfish are abundant, and the population contains quality sized individuals. White crappies are also abundant at Roush Lake and are providing good angling opportunity as well.

- Despite continued stocking efforts, general lake surveys have yet to demonstrate that an acceptable walleye population exists at Roush Lake.

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INTRODUCTION

J.E. Roush is a U.S. Army Corps of Engineers (USACE) flood control project located approximately two miles south of the city of Huntington. The dam is located on the Wabash River at river mile (RM) 411.1 and was completed in 1968. Minimum (winter) pool is 500 acres, seasonal (summer) pool is 900 acres, and maximum flood pool is 7,900 acres. Drainage area is 707 square miles. At seasonal pool maximum depth is 33 feet and average depth is 14 feet. The pool elevation at Roush Lake is reduced from 749 to 737 ft over a three month period each fall. Following this draw down the most extreme fluctuations in water level often occur. Increases in pool elevation of at least 16 ft over an 11 day period occurred six times during 2007. These extreme fluctuations in water level have a dramatic effect on fish populations and make sport fish management at Roush Lake very difficult.

The land around the reservoir is leased to the Department of Natural Resources (DNR) and managed for recreation including modern and primitive campgrounds, boat launches, public beach, fishing and hunting areas. Three years after completion of the dam the reservoir was stocked with largemouth bass, bluegill, redear sunfish, white crappie, channel catfish, and white bass. Hybrid striped bass were stocked into the reservoir from 1983 to 1985. When fish are available, approximately 280,000 walleye fry are stocked into the property rearing pond. The rearing pond received walleye fry in 2006 and 2007. Success of the Roush Lake rearing pond has been variable since stockings began in 1991 and accurate records of walleye fingerlings stocked into the reservoir are not available. The last general fish population survey on J.E. Roush Lake was conducted in July 2001. A general fish population survey was conducted July 15 to July 17, 2007 to evaluate the overall condition of the fishery and survival of stocked walleye.

METHODS

The general survey of Roush Lake was conducted from July 15 to July 17, 2007. Temperature and oxygen profiles were collected at the deepest point using a Hydrolab Quanta®. Fish collection effort consisted of 2.0 h of pulsed D.C. night electrofishing with two dippers. A total of nine trap net sets and twelve experimental gill net sets were made over a two day period (Figure 1). Total length of all fish was measured to the nearest 0.1 in and weight was measured to the nearest 0.01 lbs. Five scales per half-inch group were collected from bluegill, largemouth bass, white crappie, and white bass for age determination and back-calculated lengths-at-age.

Pectoral spines were collected from channel catfish for age determination and back-calculated lengths-at-age. Catfish spines were cut into 0.03 in sections using a Buehler® Isomet low-speed diamond blade sectioning saw. Sections were observed under a stereomicroscope and digitized using a Paxcam® digital microscope camera (MIS, Inc., 2007). After identifying the central lumen of the spine, annuli measurements were made using SigmaScan 5.0 (Systat software, 2007) perpendicular to the central lumen and extending edgeward. Values were then input into FishBC® (Doll, 2003) to estimate back-calculated lengths. Length frequency distribution for reporting purposes will be grouped in half-inch groups which are defined as X.0 – X.4 and X.5 – X.9. Age length keys were also constructed to determine mean length at age. Proportional stock density (PSD) was calculated for bluegill and largemouth bass using electrofishing catch only (Anderson and Neumann 1996).

RESULTS

On July 15 the water temperature was 79.4ºF at the surface and a dissolved oxygen concentration greater than 3.0 ppm was present down to a depth of 12 ft. The lake was at normal pool and the secchi disk depth was recorded at 1.5 ft.

A total of 1,945 fish, representing 25 species, was collected during this survey. Total weight of the fish sample was approximately 1,299 lbs. Freshwater drum were the most abundant fish collected by number (27%), followed by channel catfish (17%), and gizzard shad (16%). Freshwater drum were the most abundant collected by weight (19%), followed by common carp (19%), and channel catfish (18%). Species collected in past surveys, but not in this survey included; golden redhorse, highfin carpsucker, bluntnose minnow, white sucker, flathead catfish, redear sunfish, and river shiner (Table 1).

A total of 516 freshwater drum, ranging in total length from 2.5 to 23.1 in was collected during this survey. The abundance of freshwater drum has increased since the 1997 and 2001 surveys, and now represents nearly one-third of the reservoirs fish biomass.

A total of 332 channel catfish, ranging in total length from 5.3 to 28.3 in was collected during this survey. Channel catfish of quality size (16 in or greater) comprised 23% of the sample, while channel catfish of this size comprised 32% of the 2001 survey. The electrofishing, gill net, and trap net catch rates were 2 fish/h, 27 fish/lift, and 1 fish/lift, respectively. Based on the age length key and back calculated lengths at age, the majority of channel catfish reach quality size (16 in) by age 5.

Gizzard shad collected during this survey ranged in total length from 6.6 to 19.0 in and all were assumed to be age 1 or older. The relative abundance of gizzard shad has increased since the 1997 and 2001 surveys (Table 1).

A total of 135 white crappies was collected at Roush Lake. The electrofishing, gill net, and trap net catch rates were 7 fish/h, 6 fish/lift, and 6 fish/lift, respectively. White crappies of quality size (8 in or greater) comprised 27% of the sample. Based on th age length key and back calculated lengths at age, the majority of white crappies reach 8 in by age 2.

Of the 59 white bass collected during the survey the largest was 16.8 in. The electrofishing, gill net, and trap net catch rates were 2 fish/h, 5 fish/lift, and 0 fish/lift, respectively. White bass of quality size (9 in or greater) comprised 93% of the sample. Based on the age length key and back calculated lengths at age, the majority of white bass reach 9 in by age 1.

A total of 50 largemouth bass was collected at Roush Lake. The electrofishing, gill net, and trap net catch rates were 24 fish/h, 0 fish/lift, and 0 fish/lift, respectively. Total length of largemouth bass collected ranged from 2.4 to 16.2 in, and included only two fish over the 14 in minimum size limit. The PSD for largemouth bass during this survey was 25. Based on the age length key and back calculated lengths at age, the majority of largemouth bass reach 12 in by age 3.

A total of 40 bluegills, ranging in total length from 3.7 to 7.2 in, was collected at Roush Lake. The electrofishing, gill net, and trap net catch rates were 15 fish/h, 0 fish/lift, and 1 fish/lift, respectively. The PSD for bluegill was 23, and no preferred size (8 in) bluegills were collected during electrofishing. Bluegills of quality size (6 in or greater) comprised 28% of the sample. Based on the age length key and back calculated lengths at age, the majority of bluegills reach 6 in between ages 2 - 3.

Five walleye were collected during the survey, all of which were young-of-the-year. Total length of walleye collected ranged from 4.3 to 5.8 in.

DISCUSSION

The primary function of the Upper Wabash Reservoirs (J.E. Roush, Mississinewa, and Salamonie reservoirs) is flood control for the Wabash River. Over 50% of the Roush lake volume is drained each fall to increase storage capacity and even more extreme fluctuations often occur during the subsequent months. This frequent raising and lowering of water levels

produces an unstable environment for all aquatic life in the reservoir, and has a dramatic effect on the fishery.

Despite the dramatic changes in water level, Roush Lake continues to provide good angling opportunities for several species. Freshwater drum and channel catfish continue to provide the best angling opportunities at Roush Lake. The abundance of freshwater drum continues to increase from past surveys, and the population contains larger individuals. While this species is not typically considered a game fish, it is likely attracting some anglers. Freshwater drum are very easy to catch and larger individuals can put up a good fight. Channel catfish are abundant, and the population contains quality sized individuals. White crappies are also abundant at Roush Lake and are providing good angling opportunity as well. Although the abundance of several other species is considered to be low including white bass, largemouth bass, bluegill, and walleye, these species are still available and may be providing a bonus catch for anglers on a limited basis.

Despite continued stocking efforts, general lake surveys have yet to demonstrate that an acceptable walleye population exists at Roush Lake. This is likely due to poor survival and the loss of fish downstream during periods of rapid flushing. However walleye passing through the dam and returning in the spring have enhanced the tailwater fishery. Walleye movement upstream of the reservoir has also been documented (Benson 2004).

RECOMMENDATIONS

- The rearing pond at Huntington Reservoir should continue to receive walleye fry on an annual basis when fish are available.

- The freshwater drum and catfish fishery should be promoted through the news media.

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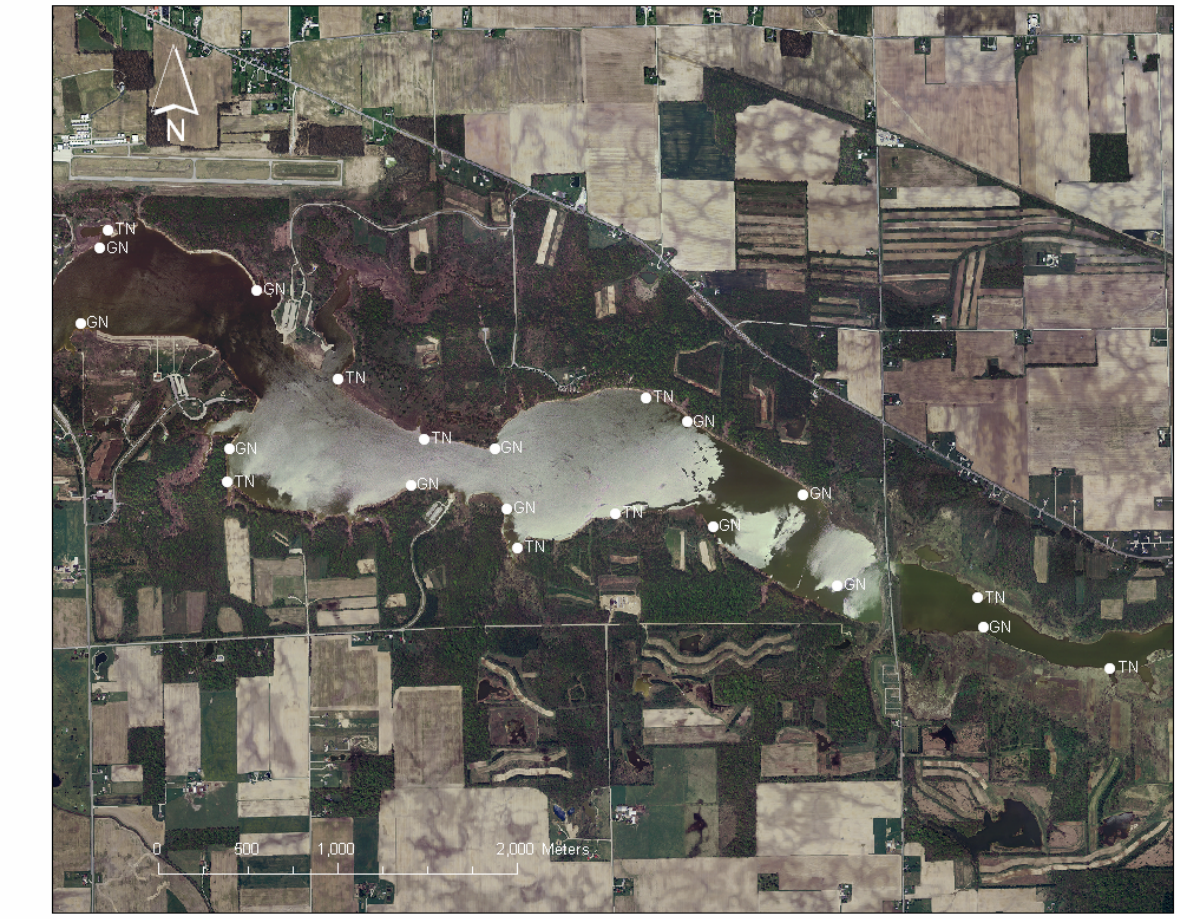

Figure 1. Sampling gear locations at Roush Lake, Huntington County, Indiana in July 2007.

Table 1. Abundance of fish collected during general surveys at Roush Lake from 1997 through 2007.

Species	1997	2001	2007
Freshwater Drum	188	278	516
Channel Catfish	226	201	332
Gizzard Shad	65	183	318
Quillback	34	136	157
White Crappie	391	70	135
Common Carp	150	173	93
Black Bullhead	10	5	80
Orangespotted Sunfish	14	14	64
White Bass	11	128	59
Largemouth Bass	36	24	50
Bluegill	57	27	40
Golden Shiner	25	49	19
Spotfin Shiner	8	3	13
Longear Sunfish	40	42	13
Spotted Sucker	74	71	12
Goldfish	40	26	9
Black Crappie	169	7	8
Log Perch	4	1	6
Green Sunfish	8	6	5
Yellow Perch	32	5	5
Walleye	2	8	5
Bigmouth Buffalo	1	1	3
Yellow Bullhead	4	4	2
Smallmouth Bass		2	1
Golden Redhorse	14	15	
Highfin Carpsucker		9	
Bluntnose Minnow		2	
White Sucker	2	2	
Flathead Catfish	1	1	
Redear Sunfish	1	1	
River Shiner	2		
Total	1609	1494	1945
Electrofishing Effort (h)	3.0	2.0	2.0
# of Gill Net Lifts	12	12	12
# of Trap Net Lifts	6	6	9

Appendix
Lake Pages

LAKE SURVEY REPORT

Type of Survey: [ ] Initial Survey [x] Re-Survey

Lake Name	County	Date of survey (Month, day, year)
Roush Lake	Huntington	7/15/2007
Biologist's name		Date of survey (Month, day, year)
Rod A. Edgell		7/17/2007

LOCATION

Quadrangle Name	Range	Section
Majenica	10E, 9E, 10E	3, 4, 5; 25, 36; 30-34
Township Name	Nearest Town	
27N, 28N, 28N	Huntington	

ACCESSIBILITY

State owned public access site	Privately owned public access site	Other access site
2		

Surface acres	Maximum depth	Average depth	Acre feet	Water level	Extreme fluctuations
900	33	14	12,500	749 @ seasonal pool	61 ft

Location of benchmark: T28N, R10E, S32 1200ft W of bridge on 200E

INLETS

Name	Location	Origin
Wabash River	T27N, R10E, S3	Grand Lk, Mercer Co., OH

OUTLETS

Name	Location
Wabash River	T27N, R10E, S3

Water level control: one 30" bypass tube, six sluice gates (6' x 6'), three tainter gates (35' x 45')

POOL	ELEVATION (Feet MSL)	ACRES
TOP OF DAM	805	
TOP OF FLOOD CONTROL POOL	798	7,900
TOP OF CONSERVATION POOL	749	900
TOP OF MINIMUM POOL	737	500
STREAMBED	716	

Bottom type

x	Boulder
	Gravel
x	Sand
x	Muck
x	Clay
	Marl

Watershed use: General farming

Development of shoreline: Forested with campsites, boat ramps, and a public beach

Previous surveys and investigations

Upper Wabash River Stream Survey, Aderkas and McReynolds (1962); IDNR Pre-population Control Report, McGinty (1970); Fisheries Surveys (1971, 1972, 1973, 1974, 1977, 1980, 1981, 1997, 2001); Evaluation of a Hybrid Striped Bass Introduction into Huntington Reservoir (1984, 1985, 1986).

SAMPLING EFFORT					
ELECTROFISHING	Day hours: 0		Night hours: 2		Total hours: 2
TRAP NETS	Number of traps: 4/1		Number of Lifts: 2/1		Total effort: 9
GILL NETS	Number of nets: 6		Number of Lifts: 2		Total effort: 12
ROTENONE	Gallons	ppm	Acre Feet Treated	SHORELINE SEINING	Number of 100 Foot Seine Hauls

PHYSICAL AND CHEMICAL CHARACTERISTICS		
Color: Tan/Green	Turbidity: 1 Feet 6 Inches (SECCHI DISK)	Air temperature: 85º F
Water chemistry GPS coordinates: N W		

WATER QUALITY PARAMETERS															
DEPTH (Feet)	Degrees (F)	D.O.	SpC	pH	TDS	D.O.%	Turb.	DEPTH	Degrees (F)	D.O.	SpC	pH	TDS	D.O.%	Turb.
SURFACE	79.4	6.02	0.605	7.97	0.4	77.1	69	52							
2.1	79.4	5.49	0.605	7.9	0.4	70.2	72	54							
4	77.8	4.4	0.607	7.65	0.4	55.3	64.9	56							
6	77.3	3.63	0.606	7.59	0.4	45.5	59	58							
8	77.2	3.32	0.606	7.57	0.4	41.5	57.4	60							
10	77.2	3.18	0.606	7.55	0.4	39.8	57.6	62							
12	77.2	3.04	0.606	7.55	0.4	38	58	64							
14	77.1	2.82	0.606	7.51	0.4	35.3	56.6	66							
15.8	77	2.75	0.608	7.47	0.4	34.3	57	68							
18	76.8	1.97	0.61	7.37	0.4	24.2	58.5	70							
20	76.7	1.26	0.61	7.32	0.4	15.7	61.8	72							
21.9	76.7	1	0.612	7.3	0.4	12.5	61.1	74							
24	76.3	0.57	0.617	7.18	0.4	7.1	96.1	76							
26.1	76.1	0.32	0.619	7.14	0.4	4	128	78							
28.1	75.7	0.11	0.627	7.09	0.4	1.4	146	80							
30	75.6	0	0.628	7.09	0.4	0	202	82							
31.5	75.1	0.33	0.653	6.74	0.4	4.1	5999	84							
34								86							
36								88							
38								90							
40								92							
42								94							
44								96							
46								98							
48								100							
50															

COMMENTS

SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT					
*COMMON NAME OF FISH	NUMBER	PERCENT	LENGTH RANGE (inches)	WEIGHT (pounds)	PERCENT
Freshwater Drum	516	26.5	2.5-23.1	243.14	18.7
Channel Catfish	332	17.1	5.3-28.3	233.45	18.0
Gizzard Shad	318	16.3	6.6-19.0	178.73	13.8
Quillback	157	8.1	3.8-18.7	180.21	13.9
White Crappie	135	6.9	2.4-13.2	38.75	3.0
Common Carp	93	4.8	2.3-23.9	242.89	18.7
Black Bullhead	80	4.1	2.1-13.5	37.29	2.9
Orangespotted Sunfish	64	3.3	2.1-3.8	1.23	0.1
White Bass	59	3.0	2.7-16.8	65.12	5.0
Largemouth Bass	50	2.6	2.4-16.2	21.47	1.7
Bluegill	40	2.1	3.7-7.2	5.38	0.4
Golden Shiner	19	1.0	4.4-7.7	1.47	0.1
Spotfin Shiner	13	0.7	3.3-3.9	0.17	0.0
Longear Sunfish	13	0.7	4.8-5.2	1.01	0.1
Spotted Sucker	12	0.6	7.3-13.3	4.78	0.4
Goldfish	9	0.5	10.3-14.9	11.05	0.9
Black Crappie	8	0.4	6.4-9.8	2.04	0.2
Log Perch	6	0.3	2.8-3.8	0.13	0.0
Green Sunfish	5	0.3	3.2-6.0	0.46	0.0
Yellow Perch	5	0.3	5.6-7.8	0.51	0.0
Walleye	5	0.3	4.3-5.8	0.16	0.0
Bigmouth Buffalo	3	0.2	22.2-26.5	28.44	2.2
Yellow Bullhead	2	0.1	6.4-7.5	0.36	0.0
Smallmouth Bass	1	0.1	10.8	0.68	0.1
Total (25 Species)	1945	100.0		1298.92	100.0

*Common names of fishes recognized by the American Fisheries Society.

					TN	GN	EF
Lake:	Roush Lake			Total #	2	372	10
Date:	7/15/2007	to	7/17/2007	Effort	9	12	2
Species:	Freshwater drum			CPUE	0	31	5
Total number:	516						
Total weight:	243.14						
Length range:	2.5	to	23.1				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	8	2	234	1	237	-
Quality	12	2	69	1	72	100
Preferred	15	1	23	1	25	100
Memorable	20	0	1	0	1	
Trophy	25	0	0	0	0	

Total length and weight was not recorded for every freshwater drum collected.

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5	1	2.04	34.0		
1.5			18.0	1	2.84	34.5		
2.0			18.5			35.0		
2.5	4	0.01	19.0	1	2.90	35.5		
3.0	2	0.01	19.5			36.0		
3.5	1	0.01	20.0			36.5		
4.0			20.5			37.0		
4.5			21.0			37.5		
5.0			21.5			38.0		
5.5	16	0.07	22.0			38.5		
6.0	40	0.10	22.5			39.0		
6.5	62	0.11	23.0	1	5.67	39.5		
7.0	18	0.14	23.5			40.0		
7.5	4	0.17	24.0			40.5		
8.0	5	0.24	24.5			41.0		
8.5	28	0.27	25.0			41.5		
9.0	28	0.32	25.5			42.0		
9.5	29	0.37	26.0			42.5		
10.0	30	0.43	26.5			43.0		
10.5	18	0.50	27.0			43.5		
11.0	11	0.57	27.5			44.0		
11.5	16	0.66	28.0			44.5		
12.0	3	0.75	28.5			45.0		
12.5	6	0.86	29.0			45.5		
13.0	4	0.94	29.5			46.0		
13.5	6	0.74	30.0			46.5		
14.0	12	1.18	30.5			47.0		
14.5	16	1.37	31.0			47.5		
15.0	7	1.41	31.5			48.0		
15.5	5	1.59	32.0			48.5		
16.0	4	1.71	32.5			49.0		
16.5	3	1.92	33.0			49.5		
17.0	2	2.25	33.5			50.0		

					TN	GN	EF
Lake:	Roush Lake			Total #	5	324	3
Date:	7/15/2007	to	7/17/207	Effort	9	12	2
Species:	Channel catfish			CPUE	1	27	2
Total number:	332						
Total weight:	233.44833						
Length range:	5.3	to	28.3				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	11	0	198	3	201	-
Quality	16	0	73	3	76	100
Preferred	24	0	4	0	4	
Memorable	28	0	1	0	1	
Trophy	36	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5	8	1.27	34.0		
1.5			18.0	5	1.48	34.5		
2.0			18.5	6	1.84	35.0		
2.5			19.0	8	1.85	35.5		
3.0			19.5	2	1.33	36.0		
3.5			20.0	1	0.00	36.5		
4.0			20.5	2	1.74	37.0		
4.5			21.0	3	3.24	37.5		
5.0	1	0.04	21.5	3	2.62	38.0		
5.5	3	0.04	22.0	3	0.00	38.5		
6.0	14	0.07	22.5	1	0.00	39.0		
6.5	22	0.07	23.0	1	4.25	39.5		
7.0	14	0.05	23.5	2	0.00	40.0		
7.5	3	0.10	24.0			40.5		
8.0	3	0.09	24.5	2	2.55	41.0		
8.5	10	0.17	25.0			41.5		
9.0	17	0.22	25.5			42.0		
9.5	17	0.27	26.0			42.5		
10.0	16	0.28	26.5			43.0		
10.5	11	0.34	27.0	1	7.60	43.5		
11.0	4	0.34	27.5			44.0		
11.5	6	0.48	28.0	1	0.00	44.5		
12.0	2	0.57	28.5			45.0		
12.5	11	0.57	29.0			45.5		
13.0	15	0.65	29.5			46.0		
13.5	20	0.77	30.0			46.5		
14.0	17	0.85	30.5			47.0		
14.5	23	0.94	31.0			47.5		
15.0	14	0.85	31.5			48.0		
15.5	13	1.15	32.0			48.5		
16.0	13	1.08	32.5			49.0		
16.5	7	1.04	33.0			49.5		
17.0	7	0.89	33.5			50.0		

					TN	GN	EF
Lake:	Roush Lake			Total #	1	228	31
Date:	7/15/2007	to	7/17/2007	Effort	9	12	2
Species:	Gizzard shad			CPUE	0	19	16
Total number:	318						
Total weight:	178.73						
Length range:	6.6	to	19.0				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	7	1	225	30	256	-
Quality	11	0	154	14	168	47
Preferred	0	1	228	31	260	103
Memorable	0	1	228	31	260	103
Trophy	0	1	228	31	260	103

Total length and weight was not recorded for every gizzard shad collected.

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0			18.5			35.0		
2.5			19.0	1	2.42	35.5		
3.0			19.5			36.0		
3.5			20.0			36.5		
4.0			20.5			37.0		
4.5			21.0			37.5		
5.0			21.5			38.0		
5.5			22.0			38.5		
6.0			22.5			39.0		
6.5	4	0.10	23.0			39.5		
7.0	7	0.13	23.5			40.0		
7.5	8	0.22	24.0			40.5		
8.0	1	0.19	24.5			41.0		
8.5	5	0.23	25.0			41.5		
9.0	6	0.28	25.5			42.0		
9.5	4	0.34	26.0			42.5		
10.0	18	0.39	26.5			43.0		
10.5	39	0.44	27.0			43.5		
11.0	50	0.52	27.5			44.0		
11.5	38	0.58	28.0			44.5		
12.0	26	0.67	28.5			45.0		
12.5	15	0.75	29.0			45.5		
13.0	14	0.85	29.5			46.0		
13.5	11	0.89	30.0			46.5		
14.0	5	1.04	30.5			47.0		
14.5	7	1.04	31.0			47.5		
15.0			31.5			48.0		
15.5			32.0			48.5		
16.0	1	0.00	32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

					TN	GN	EF
Lake:	Roush Lake			Total #	50	72	13
Date:	7/15/2007	to	7/17/2007	Effort	9	12	2
Species:	White crappie			CPUE	6	6	7
Total number:	135						
Total weight:	38.75						
Length range:	2.4	to	13.2				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	5	50	62	13	125	-
Quality	8	18	7	11	36	85
Preferred	10	12	6	10	28	77
Memorable	12	3	1	2	6	15
Trophy	15	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0	1	0.01	18.5			35.0		
2.5	7	0.01	19.0			35.5		
3.0	1	0.01	19.5			36.0		
3.5			20.0			36.5		
4.0			20.5			37.0		
4.5	1	0.07	21.0			37.5		
5.0			21.5			38.0		
5.5	1	0.09	22.0			38.5		
6.0	8	0.11	22.5			39.0		
6.5	30	0.16	23.0			39.5		
7.0	37	0.18	23.5			40.0		
7.5	13	0.21	24.0			40.5		
8.0	2	0.26	24.5			41.0		
8.5			25.0			41.5		
9.0	2	0.37	25.5			42.0		
9.5	4	0.46	26.0			42.5		
10.0	8	0.54	26.5			43.0		
10.5	6	0.64	27.0			43.5		
11.0	4	0.68	27.5			44.0		
11.5	4	0.79	28.0			44.5		
12.0	2	0.92	28.5			45.0		
12.5	2	1.16	29.0			45.5		
13.0	2	1.19	29.5			46.0		
13.5			30.0			46.5		
14.0			30.5			47.0		
14.5			31.0			47.5		
15.0			31.5			48.0		
15.5			32.0			48.5		
16.0			32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

					TN	GN	EF
Lake:	Roush Lake			Total #	0	56	3
Date:	7/15/2007	to	7/17/2007	Effort	9	12	2
Species:	White bass			CPUE	0	5	2
Total number:	59						
Total weight:	65.12						
Length range:	2.7	to	16.8				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	6	0	55	0	55	-
Quality	9	0	55	0	55	
Preferred	12	0	47	0	47	
Memorable	15	0	3	0	3	
Trophy	18	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0			18.5			35.0		
2.5	1	0.02	19.0			35.5		
3.0	3	0.02	19.5			36.0		
3.5			20.0			36.5		
4.0			20.5			37.0		
4.5			21.0			37.5		
5.0			21.5			38.0		
5.5			22.0			38.5		
6.0			22.5			39.0		
6.5			23.0			39.5		
7.0			23.5			40.0		
7.5			24.0			40.5		
8.0			24.5			41.0		
8.5			25.0			41.5		
9.0			25.5			42.0		
9.5	1	0.47	26.0			42.5		
10.0			26.5			43.0		
10.5	3	0.55	27.0			43.5		
11.0	3	0.43	27.5			44.0		
11.5	1	0.65	28.0			44.5		
12.0	4	0.84	28.5			45.0		
12.5	2	1.03	29.0			45.5		
13.0	8	1.11	29.5			46.0		
13.5	7	1.24	30.0			46.5		
14.0	17	1.34	30.5			47.0		
14.5	6	1.59	31.0			47.5		
15.0	1	1.64	31.5			48.0		
15.5	1	1.74	32.0			48.5		
16.0			32.5			49.0		
16.5	1	2.26	33.0			49.5		
17.0			33.5			50.0		

					TN	GN	EF
Lake:	Roush Lake			Total #	3	0	47
Date:	7/15/2007	to	7/17/2007	Effort	9	12	2
Species:	Largemouth bass			CPUE	0	0	24
Total number:	50						
Total weight:	21.47						
Length range:	2.4	to	16.2				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	8	0	0	24	24	-
Quality	12	0	0	6	6	25
Preferred	15	0	0	2	2	8
Memorable	20	0	0	0	0	
Trophy	25	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0	2	0.01	18.5			35.0		
2.5	4	0.02	19.0			35.5		
3.0	6	0.02	19.5			36.0		
3.5	4	0.03	20.0			36.5		
4.0	3	0.04	20.5			37.0		
4.5			21.0			37.5		
5.0			21.5			38.0		
5.5			22.0			38.5		
6.0			22.5			39.0		
6.5			23.0			39.5		
7.0	5	0.21	23.5			40.0		
7.5	2	0.27	24.0			40.5		
8.0	7	0.30	24.5			41.0		
8.5	1	0.37	25.0			41.5		
9.0	1	0.43	25.5			42.0		
9.5	4	0.48	26.0			42.5		
10.0	3	0.58	26.5			43.0		
10.5			27.0			43.5		
11.0	1	0.78	27.5			44.0		
11.5	1	0.99	28.0			44.5		
12.0	2	1.02	28.5			45.0		
12.5	1	1.48	29.0			45.5		
13.0			29.5			46.0		
13.5	1	2.69	30.0			46.5		
14.0			30.5			47.0		
14.5			31.0			47.5		
15.0	1	2.27	31.5			48.0		
15.5			32.0			48.5		
16.0	1	2.67	32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

					TN	GN	EF
Lake:	Roush Lake			Total #	10	0	30
Date:	7/15/2007	to	7/17/2007	Effort	9	12	2
Species:	Bluegill			CPUE	1	0	15
Total number:	40						
Total weight:	5.38						
Length range:	3.7	to	7.2				

Group	TL (in)	TN	GN	EF	TOTAL	RSD
Stock	3	10	0	30	40	-
Quality	6	4	0	7	11	23
Preferred	8	0	0	0	0	
Memorable	10	0	0	0	0	
Trophy	12	0	0	0	0	

Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)	Length group (in)	#	Mean weight (lbs)
1.0			17.5			34.0		
1.5			18.0			34.5		
2.0			18.5			35.0		
2.5			19.0			35.5		
3.0			19.5			36.0		
3.5	1	0.05	20.0			36.5		
4.0	6	0.06	20.5			37.0		
4.5	10	0.08	21.0			37.5		
5.0	5	0.12	21.5			38.0		
5.5	7	0.15	22.0			38.5		
6.0	6	0.20	22.5			39.0		
6.5	2	0.23	23.0			39.5		
7.0	3	0.28	23.5			40.0		
7.5			24.0			40.5		
8.0			24.5			41.0		
8.5			25.0			41.5		
9.0			25.5			42.0		
9.5			26.0			42.5		
10.0			26.5			43.0		
10.5			27.0			43.5		
11.0			27.5			44.0		
11.5			28.0			44.5		
12.0			28.5			45.0		
12.5			29.0			45.5		
13.0			29.5			46.0		
13.5			30.0			46.5		
14.0			30.5			47.0		
14.5			31.0			47.5		
15.0			31.5			48.0		
15.5			32.0			48.5		
16.0			32.5			49.0		
16.5			33.0			49.5		
17.0			33.5			50.0		

Back-calculated lengths-at-age for channel catfish captured at Roush Lake, Huntington County, Indiana in July 2007.

		Age									
Year Class	# Aged	I	II	III	IV	V	VI	VII	VIII	IX	X
2006	16	4.1									
	SD	0.7									
2005	29	4.8	8.5								
	SD	1.0	1.1								
2004	1	7.8	11.3	13.2							
	SD										
2003	30	3.7	7.7	10.7	12.7						
	SD	0.8	1.1	1.1	1.1						
2002	14	4.9	8.7	11.9	14.1	15.6					
	SD	1.2	1.5	1.2	1.0	1.1					
2001	6	4.3	8.1	11.3	13.8	15.6	17.0				
	SD	1.1	1.3	1.5	1.1	0.9	0.8				
2000	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
	SD										
1999	4	4.6	9.6	12.2	14.6	16.5	18.2	19.6	20.7		
	SD	0.6	1.4	1.1	0.5	0.6	0.7	0.6	0.5		
1998	2	7.6	11.1	14.0	16.5	18.7	20.5	22.0	23.3	24.3	
	SD	3.2	4.8	3.8	3.7	4.2	4.2	4.3	4.5	4.8	
1997	2	5.5	8.5	11.2	13.2	14.9	15.9	17.4	19.0	20.4	21.2
	SD	0.3	0.9	2.1	3.6	4.0	4.5	5.4	5.4	6.1	6.7
Mean*		4.4	8.5	11.5	13.8	15.9	17.6	19.6	20.7		
SD		0.9	1.3	1.2	0.9	0.9	0.8	0.6	0.5		

*Does not include age groups with less than three samples.

Age-length key for channel catfish captured at Roush Lake, Huntington County, Indiana in July 2007.

Length Group	# in sample	# (age) in subsample	Age																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
5.0	1	1(1)	1																
5.5	3																		
6.0	14	5(1)	14																
6.5	22	5(1)	22																
7.0	14	3(1)	14																
7.5	3	2(1)	3																
8.0	3	2(2)		3															
8.5	10	3(2)		10															
9.0	17	5(2)		17															
9.5	17	4(2)		17															
10.0	16	5(2)		16															
10.5	11	5(2)		11															
11.0	4	2(2)		4															
11.5	6	2(2), 2(4)		3		3													
12.0	2	1(2)		2															
12.5	11	4(4)				11													
13.0	15	5(4)				15													
13.5	20	4(4)				20													
14.0	17	1(3), 4(4)			3	14													
14.5	23	5(4)				23													
15.0	14	3(4), 1(5)				11	3												
15.5	13	2(4), 2(5)				6	7												
16.0	13	5(5)					13												
16.5	7	1(4), 3(5), 1(10)				1	5					1							
17.0	7	1(6)						7											
17.5	8	1(5), 3(6)					2	6											
18.0	5	1(6)						5											
18.5	6	1(5)					6												
19.0	8	1(5), 1(6)					4	4											
19.5	2																		
20.0	1	1(8)								1									
20.5	2																		
21.0	3	1(8), 1(12)								2				1					
21.5	3	1(8), 1(9)								2	1								
22.0	3	1(8)								3									
22.5	1																		
23.0	1	1(17)																	1
23.5	2																		
24.0																			
24.5	2	1(15)															2		
25.0																			
25.5																			
26.0																			
26.5																			
27.0	1	1(10)										1							
27.5																			
28.0	1	1(9)									1								
Mean TL			6.8	9.9	14.3	14.1	16.9	18.0		21.6	24.4	21.1		21.3			24.8		23.3
SE			0.07	0.10	0.00	0.10	0.21	0.15		0.28	2.60	4.38							

Back-calculated lengths-at-age for white crappies captured at Roush Lake, Huntington County, Indiana in July 2007.

		Age			
Year Class	# Aged	I	II	III	IV
2006	31	3.5			
	SD	0.5			
2005	8	3.5	8.1		
	SD	0.4	1.8		
2004	17	3.6	7.5	10.0	
	SD	0.4	0.7	0.8	
2003	8	3.7	7.9	10.4	11.8
	SD	0.7	1.6	1.1	0.8
Mean*		3.6	7.8	10.2	11.8
SD		0.5	1.4	0.9	0.8

*Does not include age groups with less than three samples.

Age-length key for white crappies captured at Roush Lake, Huntington County, Indiana in July 2007.

Length Group	# in sample	# (age) in subsample	Age 1	2	3	4
2.0	1					
2.5	7					
3.0	1					
3.5						
4.0						
4.5	1	1(1)	1			
5.0						
5.5	1	1(1)	1			
6.0	8	6(1)	8			
6.5	30	7(1)	30			
7.0	37	12(1), 1(2)	34	3		
7.5	13	3(1)	13			
8.0	2	1(1), 1(1)	2	2		
8.5						
9.0	2	2(2)		2		
9.5	4	2(2), 2(3)		2	2	
10.0	8	2(2), 5(3)		2	6	
10.5	6	5(3)			6	
11.0	4	3(3), 1(4)			3	1
11.5	4	2(3), 1(4)			3	1
12.0	2	2(4)				2
12.5	2	2(4)				2
13.0	2	2(4)				2
Mean TL			7.0	8.9	10.7	12.4
SE			0.06	0.36	0.14	0.24

Back-calculated lengths-at-age for white bass captured at Roush Lake, Huntington County, Indiana in July 2007.

		Age				
Year Class	# Aged	I	II	III	IV	V
2006	8	7.8				
	SD	1.0				
2005	3	6.2	11.8			
	SD	1.0	0.7			
2004	27	5.1	9.8	12.9		
	SD	1.1	1.3	0.7		
2003	11	5.3	10.5	12.3	14.0	
	SD	0.6	0.4	0.5	0.4	
2002	2	5.6	10.7	13.2	14.5	15.8
	SD	1.4	0.9	0.6	0.4	0.9
Mean*		6.1	10.7	12.6	14.0	0.0
SD		1.1	0.8	0.6	0.4	0.0

*Does not include age groups with less than three samples.

Age-length key for white bass captured at Roush Lake, Huntington County, Indiana in July 2007.

Length Group	# in sample	# (age) in subsample	Age				
			1	2	3	4	5
2.5	1						
3.0	3						
3.5							
4.0							
4.5							
5.0							
5.5							
6.0							
6.5							
7.0							
7.5							
8.0							
8.5							
9.0							
9.5	1	1(1)	1				
10.0							
10.5	3	3(1)	3				
11.0	3	2(1)	3				
11.5	1						
12.0	4	2(1), 1(3)	3		1		
12.5	2	2(2)		2			
13.0	8	8(3)			8		
13.5	7	1(2), 6(3)		1	6		
14.0	17	12(3), 4(4)			13	4	
14.5	6	6(4)				6	
15.0	1	1(4)				1	
15.5	1	1(5)					1
16.0							
16.5	1	1(5)					1
Mean TL			11.2	13.1	13.8	14.6	16.3
SE			0.26	0.33	0.10	0.10	0.50

Back-calculated lengths-at-age for largemouth bass captured at Roush Lake, Huntington County, Indiana in July 2007.

		Age				
Year Class	# Aged	I	II	III	IV	V
2006	4	4.4				
	SD	1.6				
2005	9	3.7	8.1			
	SD	0.9	1.8			
2004	3	4.8	9.0	12.2		
	SD	2.4	2.8	3.2		
2003	1	2.3	7.0	8.7	13.0	
	SD	0.0	0.0	0.0	0.0	
2002	1	5.8	11.3	13.5	14.3	14.9
	SD	0.0	0.0	0.0	0.0	0.0
Mean*		4.3	8.6	12.2	0.0	0.0
SD		1.6	2.3	3.2	0.0	0.0

*Does not include age groups with less than three samples.

Age-length key for largemouth bass captured at Roush Lake, Huntington County, Indiana in July 2007.

Length Group	# in sample	# (age) in subsample	Age				
			1	2	3	4	5
2.0	2						
2.5	4						
3.0	6	1(0)					
3.5	4	2(0)					
4.0	3	2(0)					
4.5							
5.0							
5.5							
6.0							
6.5							
7.0	5	1(1)	5				
7.5	2	1(1)	2				
8.0	7	1(1)	7				
8.5	1						
9.0	1	1(2)		1			
9.5	4	1(1), 3(2)	1	3			
10.0	3	3(2)		3			
10.5							
11.0	1	1(3)			1		
11.5	1	1(2)		1			
12.0	2	1(2)		2			
12.5	1	1(3)			1		
13.0							
13.5	1	1(4)				1	
14.0							
14.5							
15.0	1	1(5)					1
15.5							
16.0	1	1(3)			1		
Mean TL			8.0	10.6	13.4	13.8	15.3
SE			0.17	0.35	1.48		

Back-calculated lengths-at-age for bluegills captured at Roush Lake, Huntington County, Indiana in July 2007.

		Age			
Year Class	# Aged	I	II	III	IV
2006	9	2.6			
	SD	0.5			
2005	9	2.0	4.1		
	SD	0.4	1.2		
2004	8	2.1	3.8	5.1	
	SD	0.7	1.1	1.0	
2003	2	2.9	4.5	5.2	6.8
	SD	0.1	0.6	0.4	0.3
Mean*		2.2	3.9	5.1	0.0
SD		0.5	1.1	1.0	0.0

*Does not include age groups with less than three samples.

Age-length key for bluegills captured at Roush Lake, Huntington County, Indiana in July 2007.

Length	# in	# (age) in	Age			
Group	sample	subsample	1	2	3	4
3.5	1	1(1)	1			
4.0	6	3(1), 1(2)	5	1		
4.5	10	4(1)	10			
5.0	5	1(1), 3(2)	1	4		
5.5	7	2(2), 3(3)		3	4	
6.0	6	2(2), 3(3)		2	4	
6.5	2	1(2), 1(3)		1	1	
7.0	3	1(3), 2(4)			1	2
Mean TL			4.6	5.6	6.2	7.3
SE			0.09	0.22	0.16	0.00

Locations of gill net and trap net sets on Roush Lake, Huntington County, 2007.

Gill Nets				
1	N	40.84961414	W	-85.46407887
2	N	40.84588587	W	-85.4654307
3	N	40.82982481	W	-85.40611633
4	N	40.8320564	W	-85.41570255
5	N	40.83664834	W	-85.4178805
6	N	40.83513558	W	-85.42386183
7	N	40.84737718	W	-85.45373091
8	N	40.83944857	W	-85.45574256
9	N	40.83747447	W	-85.44377991
10	N	40.83621383	W	-85.43745526
11	N	40.83923399	W	-85.43819555
12	N	40.84039271	W	-85.42544969
Trap Nets				
1	N	40.82764685	W	-85.39778003
2	N	40.83131075	W	-85.40648648
3	N	40.84163725	W	-85.428148
4	N	40.83585441	W	-85.43034204
5	N	40.83423436	W	-85.43684908
6	N	40.83975971	W	-85.44282504
7	N	40.83778024	W	-85.45595177
8	N	40.8428818	W	-85.44851133
9	N	40.85055292	W	-85.46351024